



DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
5109 LEESBURG PIKE
FALLS CHURCH VA 22041-3258

REPLY TO
ATTENTION OF

DASG-HS-PE (40)

16 APR 1997

MEMORANDUM FOR

THE SURGEON GENERAL, U.S. NAVY, ATTN: MED 02C, 2300 E STREET, NW,
WASHINGTON, DC 20372-5120

THE SURGEON GENERAL, U.S. AIR FORCE, ATTN: SG0E, 170 LUKE AVE., SUITE #400
BOLLING AIR FORCE BASE, DC 20332-7050

SUBJECT: Tri-Service Field Water Standards for Nerve Agents

1. Request your concurrence with the subject standards given below by 11 May 1997. With your concurrence, these standards will be incorporated into NAVMED P-5010, AFOSH 48-7, and TB MED 577, Sanitary Control and Surveillance of Field Water Supplies. This document is currently in the final stages of being rewritten as a tri-service document.

2. The Army-recommended potable water standards for chemical threat agents are shown in Table 1. These standards are primarily to prevent degradation of mission performance. They are based on studies carried out by the Lawrence Livermore National Laboratory (LLNL), and have been endorsed by the National Research Council's Committee on Toxicology (COT) for all except the organophosphorus (OP) nerve agents VX, GD, GB, and GA.

a. The Multiservice Contract Steering Committee (MCSC) endorsed that the LLNL standards for short term (<7 days) exposure to any of the OP nerve agents be based on a maximum 50 percent depression of blood cholinesterase by GD. The agent GD is the quickest and most effective of the OP threat agents in aging cholinesterase (i.e., making it refractory to reactivation) and the present field test measures cholinesterase inhibition, not specific nerve agents. Agent GD is considered to present the most serious threat to soldiers in the field at concentrations of 12 $\mu\text{g/L}$ (5 L/day consumption) and 4 $\mu\text{g/L}$ (15 L/day consumption) (Table 1).

Table 1. Maximum Permissible Nerve Agent Concentrations Proposed by the LLNL

	$\mu\text{g/L}$ (5 L/day)	$\mu\text{g/L}$ (15 L/day)
VX	15	5.0
GD	12	4.0
GB	28	9.3
GA	140	46

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b. The COT, which considered both health impact and performance decrements, recommended separate guidelines for each of the four OP nerve agents based on a maximum 25 percent depression of blood cholinesterase (Table 2).

Table 2. Nerve Agent Guidelines Recommended by the Committee on Toxicology

	$\mu\text{g/L}$ (5 L/day)	$\mu\text{g/L}$ (15 L/day)
VX	7.5	2.5
GD	6.0	2.0
GB	13.8	4.6
GA	70.0	22.5

3. The Army Surgeon General recommends that:

a. The standards for OP nerve agents provided by the MCSC [i.e., $12\mu\text{g/L}$ (5 L/day consumption) and $4\mu\text{g/L}$ (15 L/day consumption)] should be adopted in preference to the guidelines proposed by the committee on Toxicology.

b. The guidelines for OP nerve agents proposed by the COT should be accepted as goals.

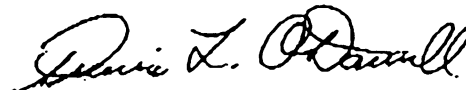
c. When field test methods become available for individual OP agents, the values listed in Table 1 should be adopted as standards.

4. The above recommendations are based on the review of the LLNL and COT reports by the U.S. Army Center for Health Promotion and Preventive Medicine and the U.S. Army Edgewood Research, Development, and Engineering Center, as shown in the enclosure.

5. Any questions or concerns should be directed to COL Steven J. Stone, P.E., (703) 681-3130, DSN 761-3130 or email to colstone@otsg.amedd.army.mil.

FOR THE SURGEON GENERAL:

Encl



FRANCIS L. O'DONNELL
COL, MC

Director, Health Services Directorate



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE



23 APR 1997

MEMORANDUM FOR DASG-HS-PE (40)

FROM: HQ AFMOA/SGOE
110 Luke Avenue, Room 400
Bolling AFB, DC 20332-7050

SUBJECT: Tri-Service Field Water Standards for Nerve Agents

In response to your memorandum pertaining to maximum permissible nerve agent concentrations in potable field water, the USAF concurs with the data (Table 1, your 16 April, 1997 correspondence), based on the studies carried out by the Lawrence Livermore National Laboratory. In addition, inclusion of these standards into AFOSH 48-7 is warranted.

GLENN A. GODDARD, Lt Col, USAF, BSC
Chief, Environmental Quality Programs
Air Force Medical Operations Agency
Office of the Surgeon General

cc: AL/OEBW



DEPARTMENT OF THE NAVY
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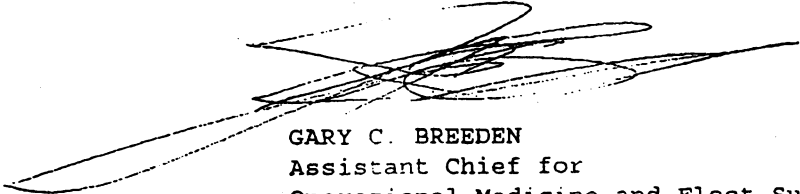
IN REPLY REFER TO
3400
Ser 02C/97U0025
12 May 97

MEMORANDUM FOR SURGEON GENERAL OF THE ARMY

Subj: TRISERVICE FIELD WATER STANDARDS FOR NERVE AGENTS

Ref: (a) DASG-HS-PE (40) memo of 16 Apr 97 w/encls

1. Reference (a) requested concurrence with the subject standards. Concur with recommendations in paragraph 3, reference (a).
2. Point of contact is Commander R. W. Williams, MSC, USN, at (202) 762-3474.



GARY C. BREEDEN
Assistant Chief for
Operational Medicine and Fleet Support
Acting